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Kimura et al.

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(54) **SHELF TAG, SHELF TAG MANUFACTURING SYSTEM, METHOD AND PROGRAM FOR MANUFACTURING SHELF TAG AND STORAGE MEDIUM**

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(51) **Int. Cl.**
G06F 17/00 (2006.01)

(52) **U.S. Cl.** **235/375**; 235/383; 235/385; 283/81

(58) **Field of Classification Search** 235/375, 235/383, 385, 487; 705/20–22, 28; 283/81
See application file for complete search history.

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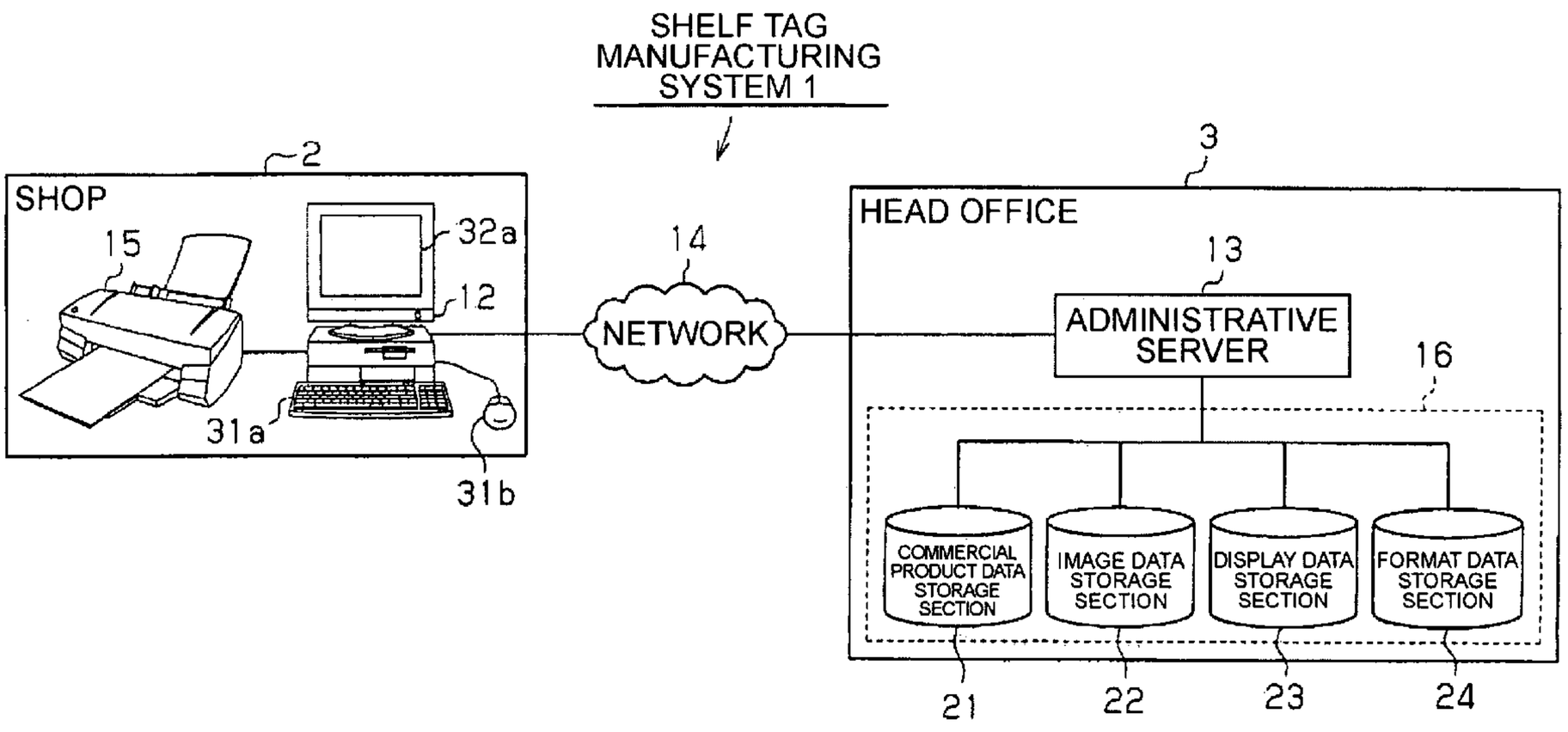
(57) **ABSTRACT**

A shelf tag to be attached to a display shelf for displaying commercial products, includes: a commercial product name and a price of the commercial product and a dimensional value indicating a display position of the commercial product to be displayed in a row direction on the display shelf printed on the tag.

12 Claims, 9 Drawing Sheets



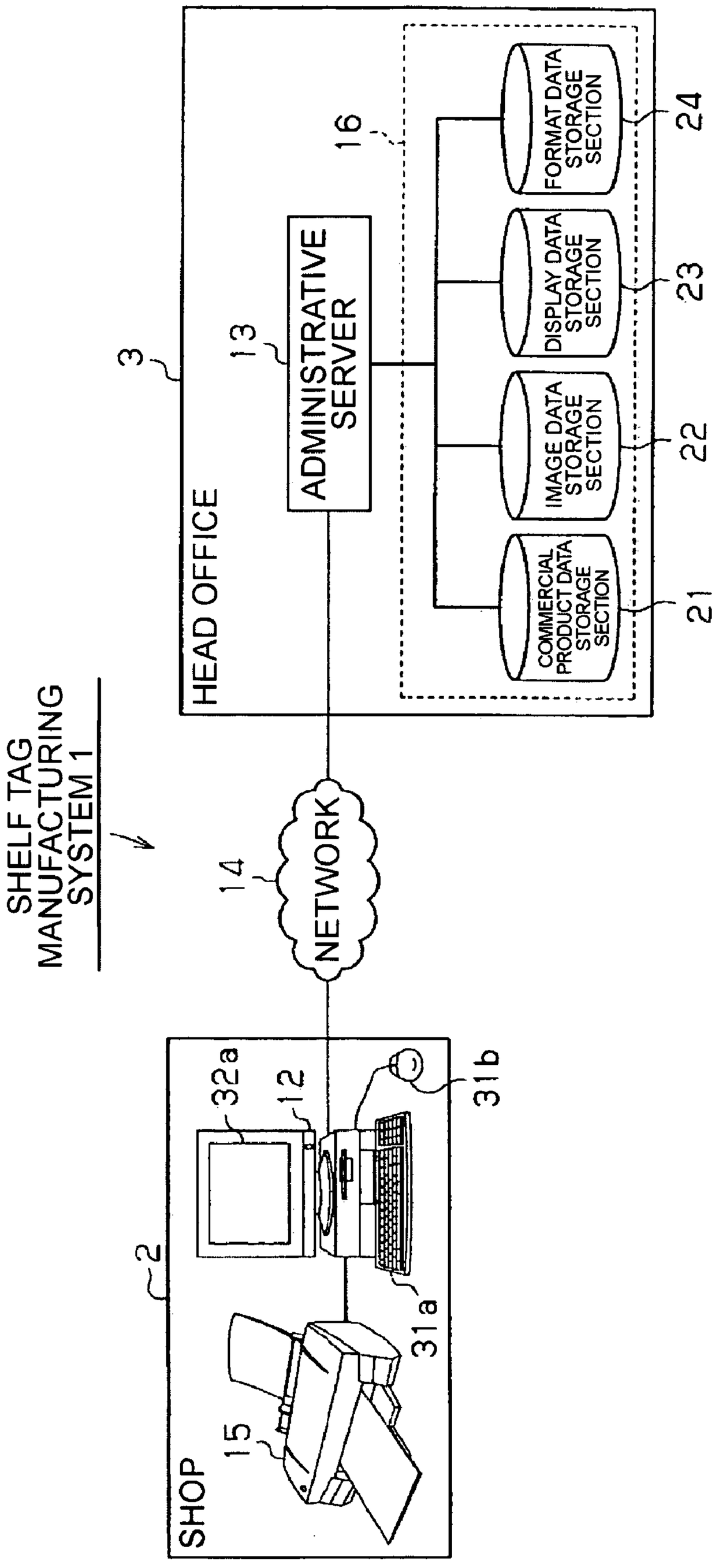

SHELF TAG MANUFACTURING SYSTEM 1
3
HEAD OFFICE
16
ADMINISTRATIVE SERVER
13
FORMAT DATA STORAGE SECTION
24
DISPLAY DATA STORAGE SECTION
23
IMAGE DATA STORAGE SECTION
22
COMMERCIAL PRODUCT DATA STORAGE SECTION
21
NETWORK
14
2
SHOP
32a
12
31b
31a
15

FIG. 1

25a 25b 25c 25d

COMMERCIAL PRODUCT CODE	COMMERCIAL PRODUCT NAME	PRICE	COMMERCIAL PRODUCT DIMENSION
J001	ROSE BOUQUET	800yen	17.5cm
J002	CHRYSANTHEMUM BOUQUET	380yen	18.0cm
⋮	⋮	⋮	⋮

25

FIG. 2

25a 26a

COMMERCIAL PRODUCT CODE	FILE NAME
J001	IMAGE FILE J1
J002	IMAGE FILE J2
⋮	⋮

FIG. 3

25a 27a 27b 27c 27d 27e

COMMERCIAL PRODUCT CODE	SHELF NO	RAIL LENGTH	DISPLAY SEQUENCE	NUMBER OF COMMERCIAL PRODUCT TO BE DISPLAYED	DISPLAY POSITION
J001	T	90cm	FIRST	TWO ROWS	0cm
J002	T	90cm	SECOND	TOW ROWS	35cm
⋮	⋮	⋮	⋮	⋮	⋮

27

FIG. 4

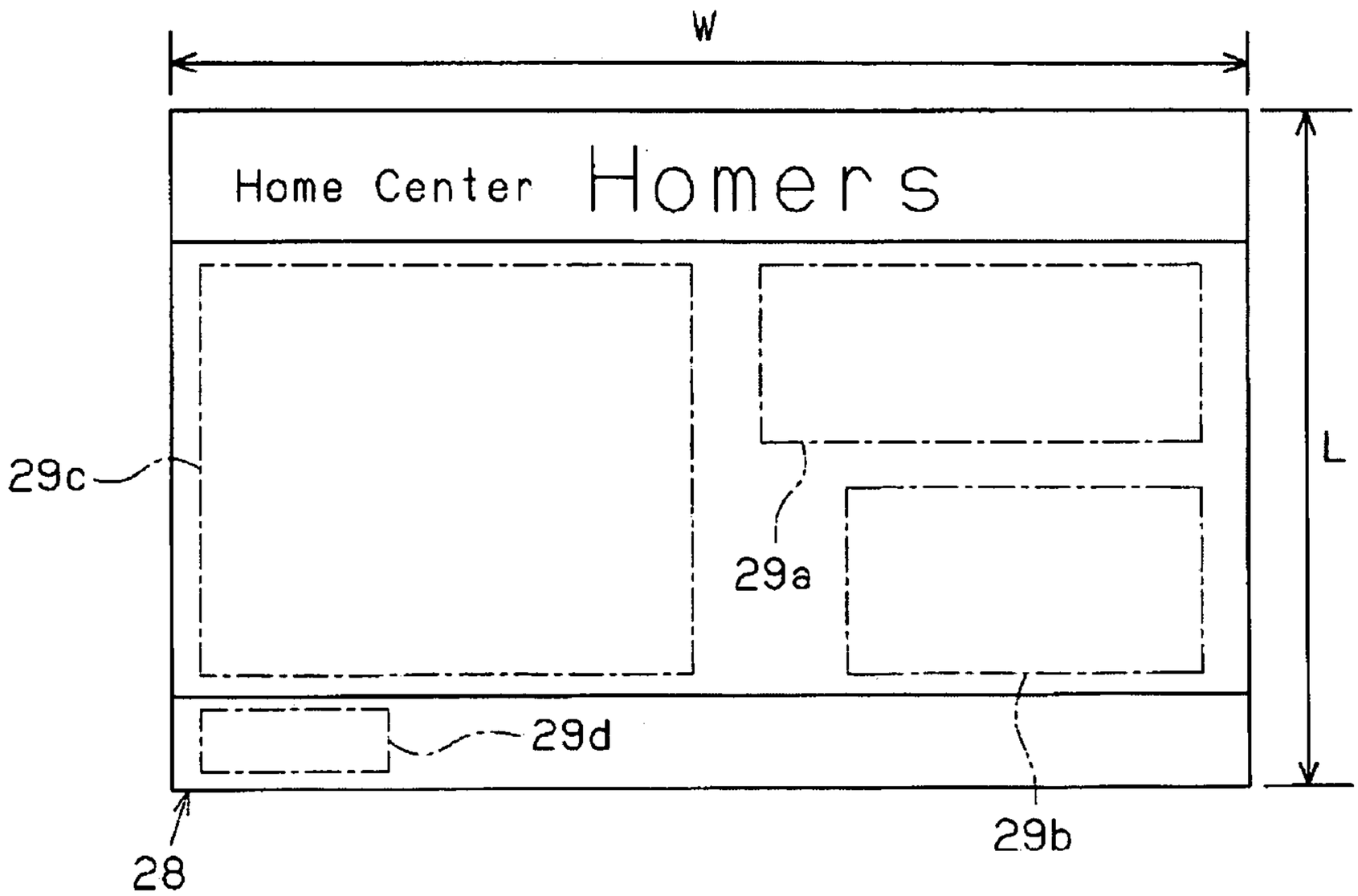


FIG. 5

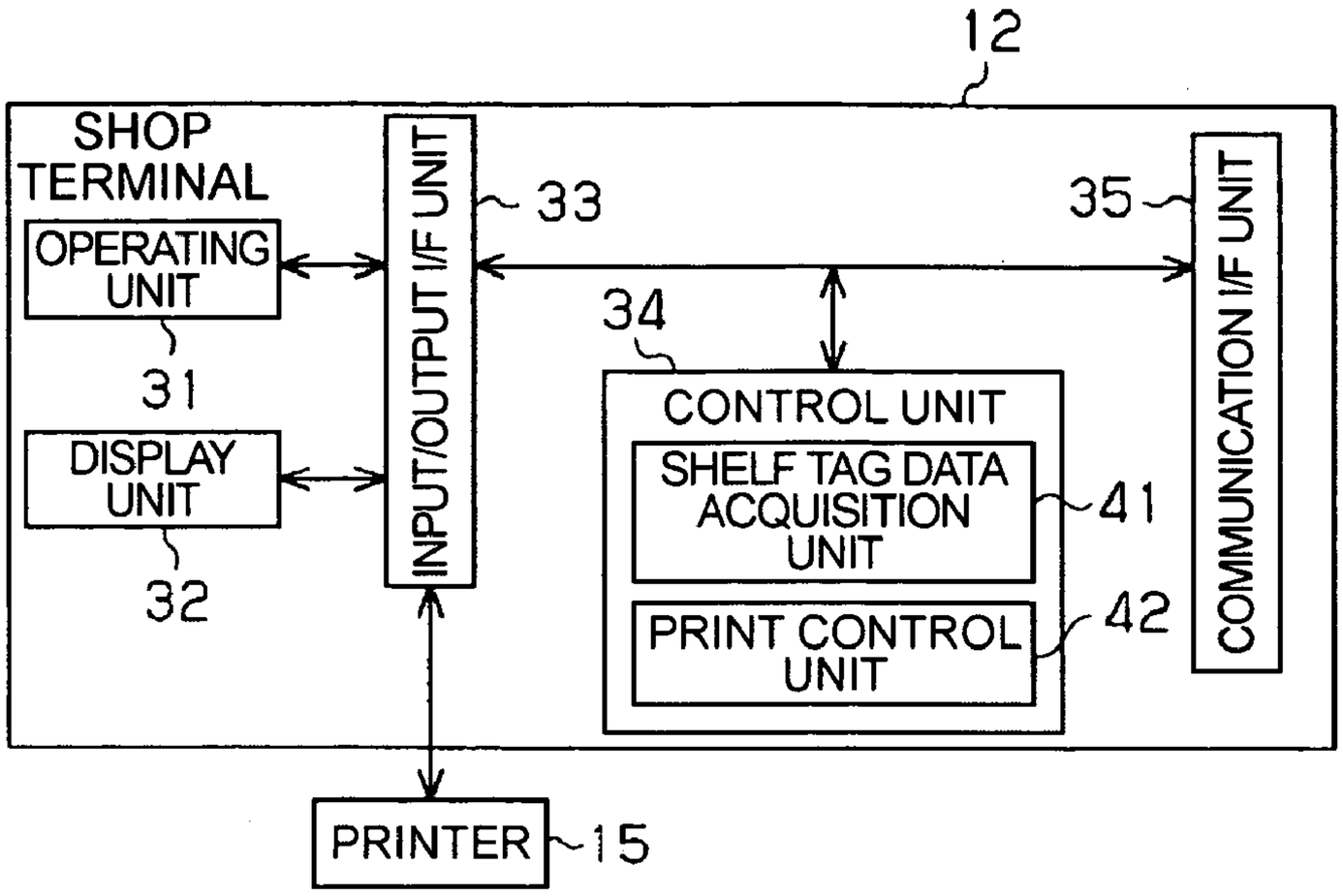

12
SHOP TERMINAL
OPERATING UNIT
31
DISPLAY UNIT
32
INPUT/OUTPUT I/F UNIT
33
35
COMMUNICATION I/F UNIT
34
CONTROL UNIT
SHELF TAG DATA ACQUISITION UNIT
41
PRINT CONTROL UNIT
42
PRINTER
15

FIG. 6

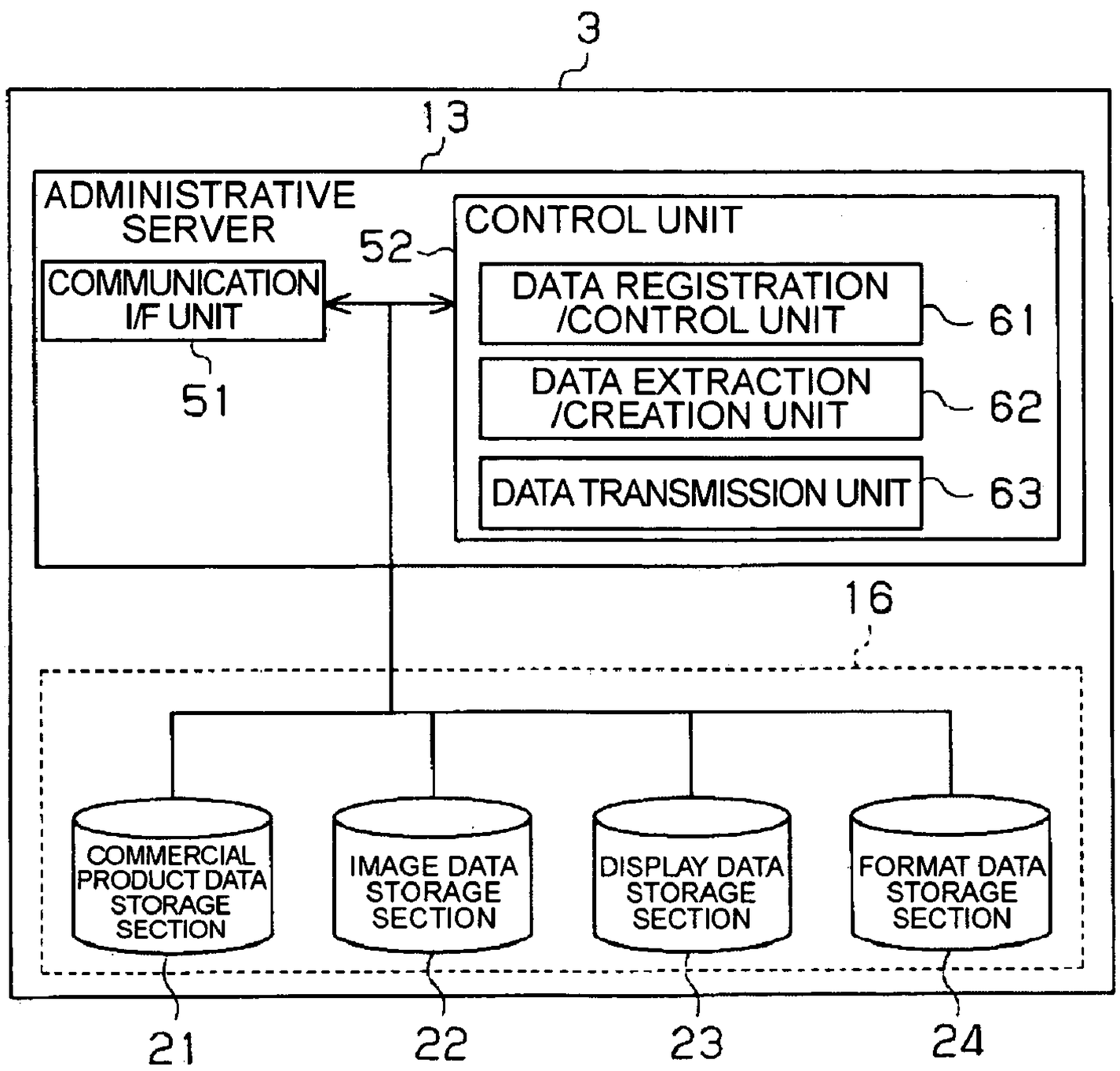

3
13
ADMINISTRATIVE SERVER
COMMUNICATION I/F UNIT
51
52
CONTROL UNIT
DATA REGISTRATION /CONTROL UNIT
61
DATA EXTRACTION /CREATION UNIT
62
DATA TRANSMISSION UNIT
63
16
COMMERCIAL PRODUCT DATA STORAGE SECTION
IMAGE DATA STORAGE SECTION
DISPLAY DATA STORAGE SECTION
FORMAT DATA STORAGE SECTION
21
22
23
24

FIG. 7

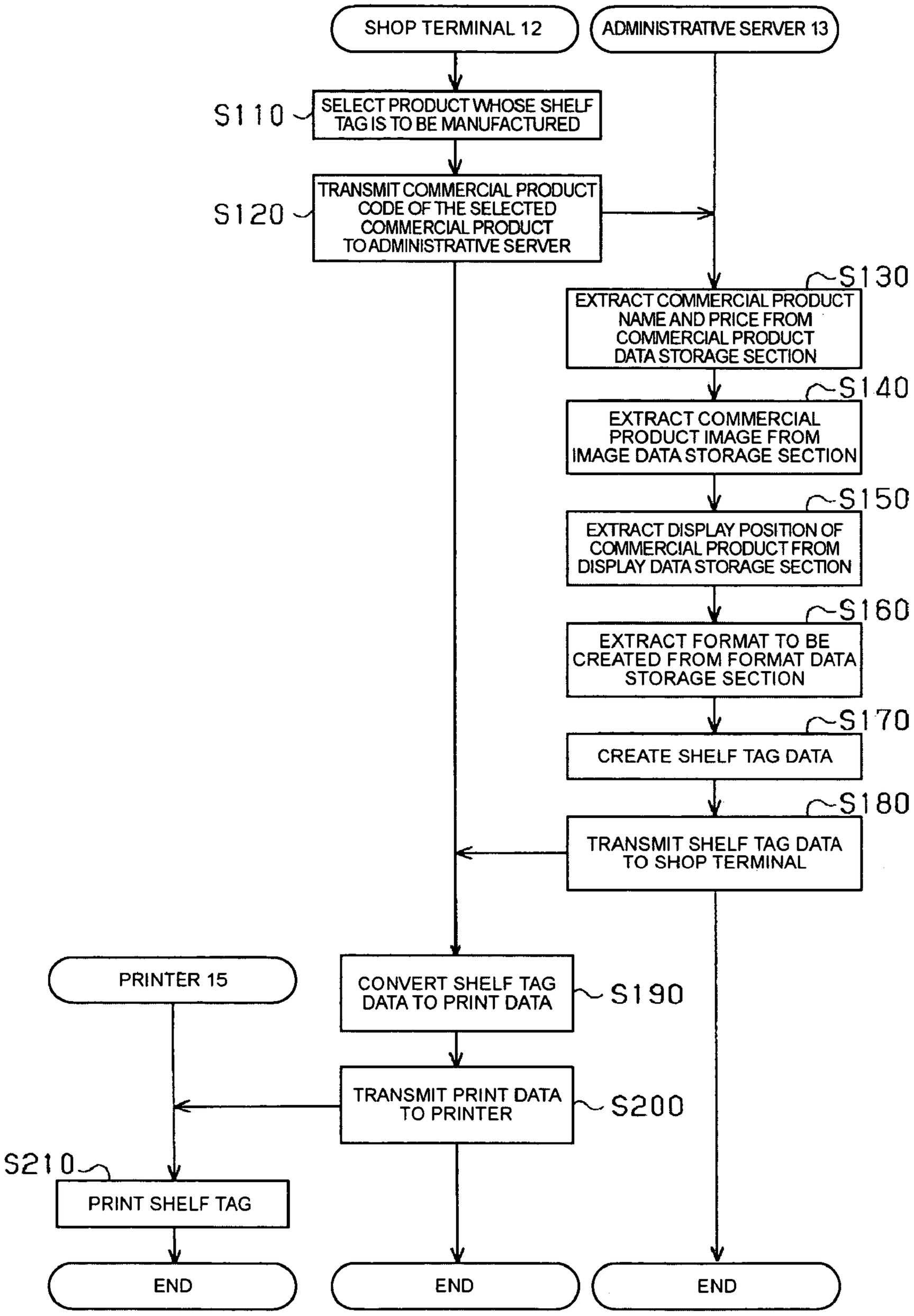

SHOP TERMINAL 12
ADMINISTRATIVE SERVER 13
S110
SELECT PRODUCT WHOSE SHELF TAG IS TO BE MANUFACTURED
S120
TRANSMIT COMMERCIAL PRODUCT CODE OF THE SELECTED COMMERCIAL PRODUCT TO ADMINISTRATIVE SERVER
S130
EXTRACT COMMERCIAL PRODUCT NAME AND PRICE FROM COMMERCIAL PRODUCT DATA STORAGE SECTION
S140
EXTRACT COMMERCIAL PRODUCT IMAGE FROM IMAGE DATA STORAGE SECTION
S150
EXTRACT DISPLAY POSITION OF COMMERCIAL PRODUCT FROM DISPLAY DATA STORAGE SECTION
S160
EXTRACT FORMAT TO BE CREATED FROM FORMAT DATA STORAGE SECTION
S170
CREATE SHELF TAG DATA
S180
TRANSMIT SHELF TAG DATA TO SHOP TERMINAL
PRINTER 15
CONVERT SHELF TAG DATA TO PRINT DATA
S190
TRANSMIT PRINT DATA TO PRINTER
S200
S210
PRINT SHELF TAG
END
END
END

FIG. 8

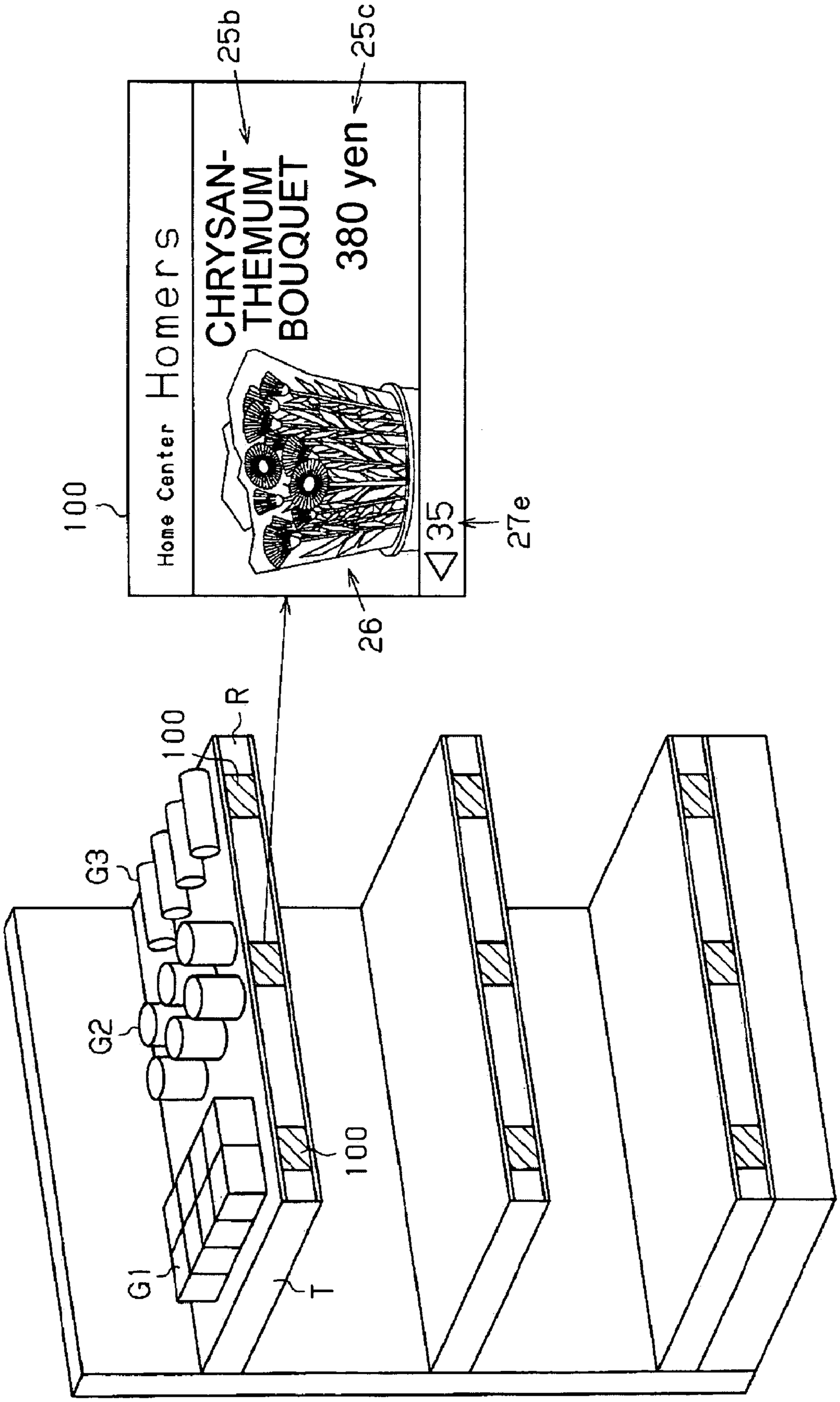

25b
25c
CHRYSAN-
THEMUM
BOUQUET
380 yen
Home Center Homers
100
35
27e
26
R
100
G3
G2
G1
100
T

FIG. 9

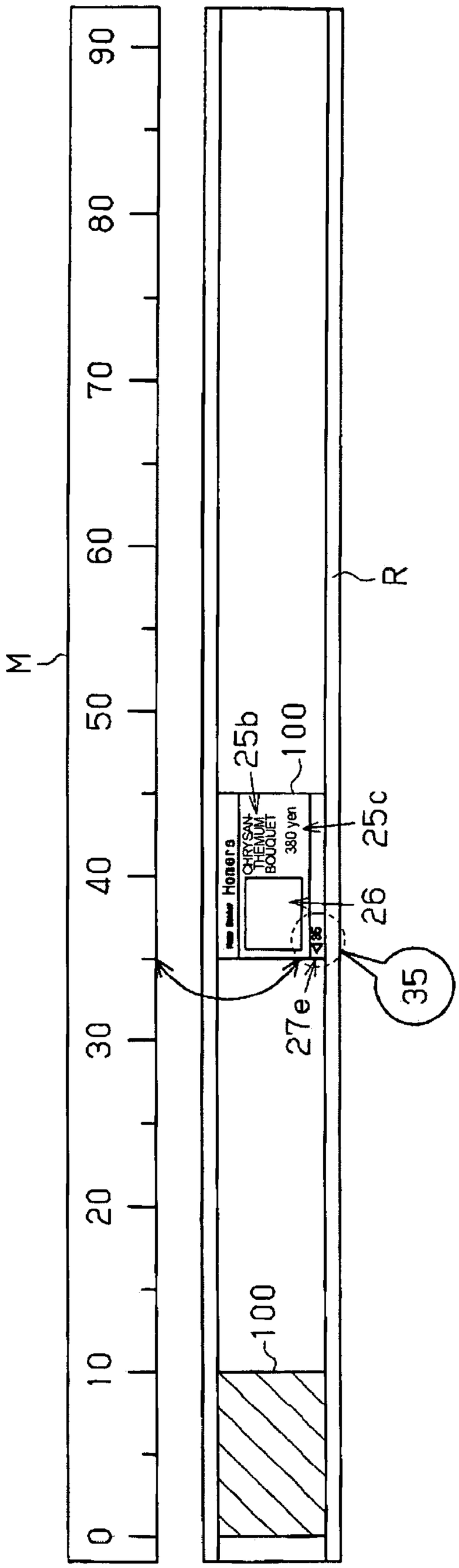

90
80
70
60
50
40
30
20
10
0
M
R
25b
100
25c
26
35
27e
100
CHRYSAN-THEMUM BOUQUET
380 yen

FIG.10

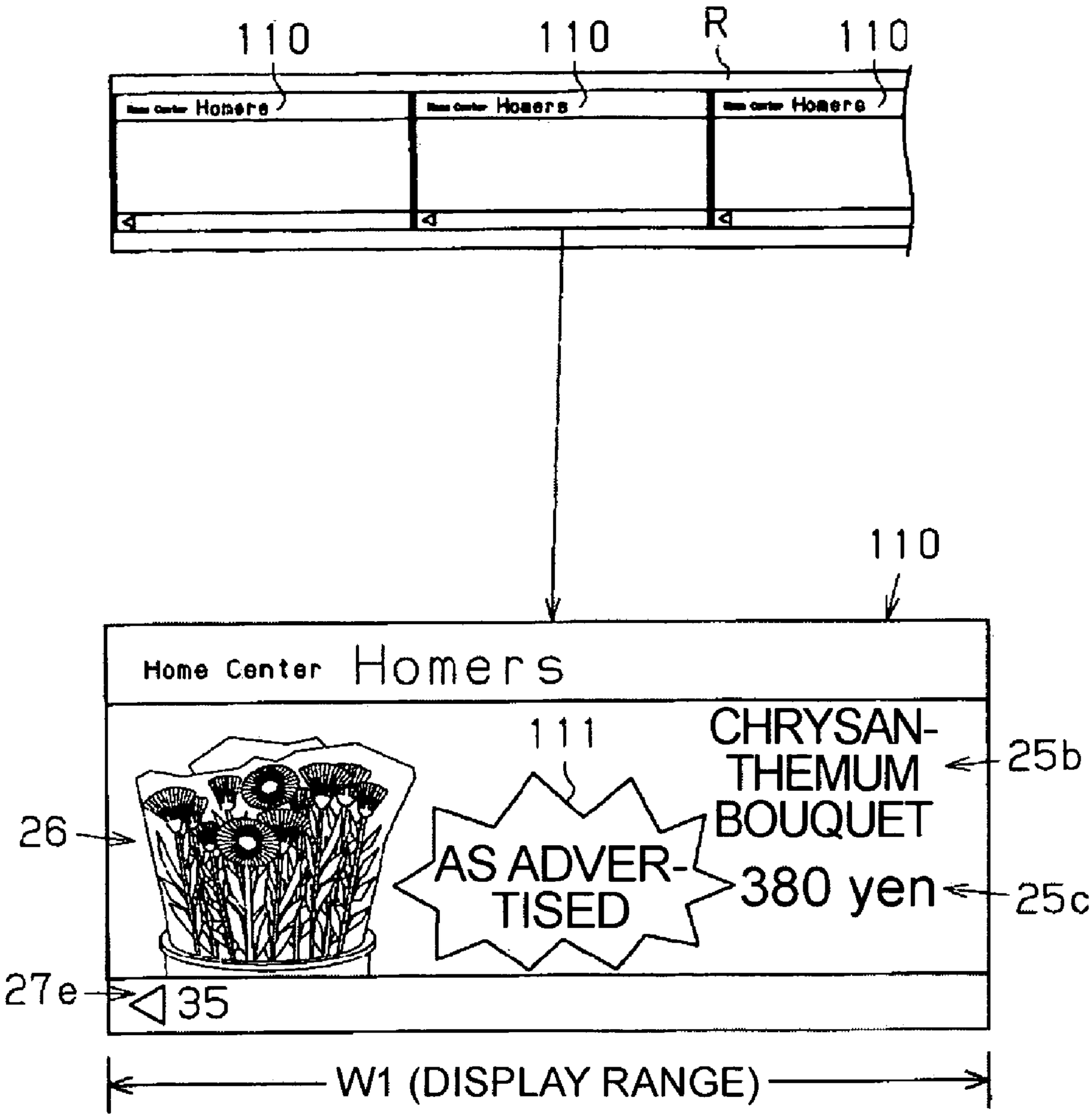

110
110
R
110
Home Center Homers
Home Center Homers
Home Center Homers
110
Home Center Homers
111
CHRYSAN-
THEMUM
BOUQUET
25b
26
AS ADVER-
TISED
380 yen
25c
27e
35
W1 (DISPLAY RANGE)

FIG.11

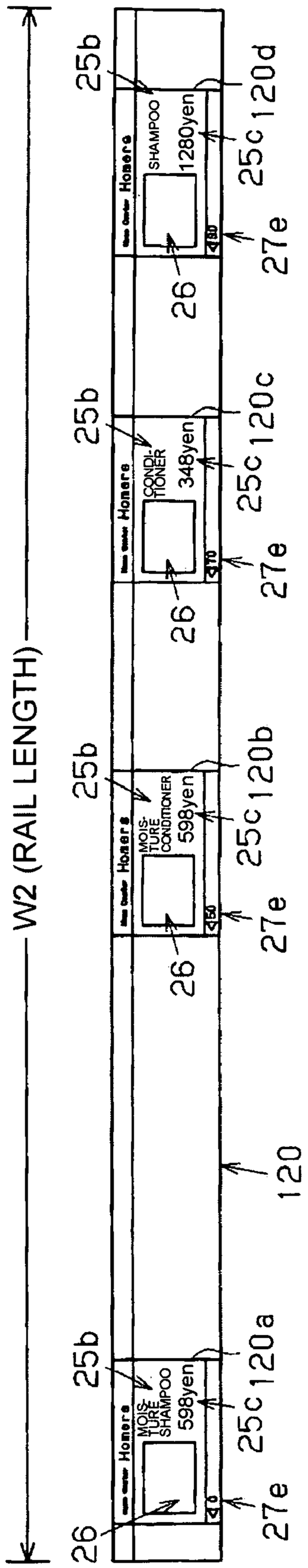

W2 (RAIL LENGTH)
25b
SHAMPOO
1280yen
120d
25c
27e
26
Homere
25b
CONDI-TIONER
348yen
120c
25c
27e
26
Homere
25b
MOIS-TURE CONDITIONER
598yen
120b
25c
27e
26
Homere
120
25b
MOIS-TURE SHAMPOO
598yen
120a
25c
27e
26

FIG.12

SHELF TAG, SHELF TAG MANUFACTURING SYSTEM, METHOD AND PROGRAM FOR MANUFACTURING SHELF TAG AND STORAGE MEDIUM

BACKGROUND

1. Technical Field

The present invention relates to an inventory tag suitable to be used as an auxiliary shelf tag which aids commercial product display work, a shelf tag manufacturing system, a method of manufacturing shelf tags, a program for manufacturing shelf tags and a storage medium storing the same.

2. Related Art

In the related art, commercial product display work is generally performed, for example, in a sequence of displaying respective commercial products in sequence from the left on a display shelf, and then attaching the shelf tags for the respective commercial projects on a rail corresponding to positions of the commercial products in the shelf. However, in this sequence, since the positions where the commercial products are displayed cannot be figured out accurately at the time of the display work. Therefore, the commercial products must be displayed by guess, and hence the display work is inefficient. In order to improve such a circumstance, in a structure disclosed in JP-A-11-306436, the efficiency of the display work is improved by zoning the display shelf into a plurality of shelves, assigning shelf numbers to the respective shelves, attaching the shelf tags manufactured on the basis of the shelf numbers on the shelf, and then displaying the commercial products.

However, in the structure disclosed in JP-A-11-306436, since it is necessary to zone the display shelf into the plurality of shelves for each commercial product, when displaying a plurality of commercial products on the display shelf in the row direction, this structure cannot be employed unless the display shelf is zoned in the row direction. Therefore, the display work is inefficient depending on the type of the display shelf and hence the problem which is suffered from in the related art is still carried down in this connection.

SUMMARY

An advantage of some aspects of the invention is to provide a shelf tag, a shelf tag manufacturing system, a method and a program of manufacturing the shelf tag, and a storage medium that can aid improvement of efficiency of commercial product display work.

In order to achieve the above described advantage, a first aspect of the invention is a shelf tag to be attached to a display shelf for displaying commercial products at least including a commercial product name and a price of the commercial product and a dimensional value indicating a display position of the commercial product to be displayed in a row direction on the display shelf printed thereon.

In this arrangement, since the dimensional value indicating the display position is printed on the shelf tag together with the commercial product name and the price of the commercial product, even when the display shelf is not zoned in the row direction, the display work can be performed with high efficiency while figuring out the display position of the commercial product by attaching the shelf tag to the display shelf on the basis of the display position printed on the shelf tag and then displaying the commercial product at the position of the shelf tag

Preferably, the dimensional value indicating the display position of the commercial product is an absolute position from one end of the display shelf in the row direction or a dimensional value indicating a relative position between the adjacent commercial products.

In this arrangement, the shelf tag can be attached accurately to a position corresponding to the display position of the commercial product in question on the basis of the display position printed as the absolute value from one end (left end or the right end) of the display shelf or the dimensional value indicating the relative position among the commercial products.

Preferably, the shelf tag is formed to have a length corresponding to a display range of the commercial products to be displayed in the row direction.

In this arrangement, since the shelf tag is formed to have a length corresponding to the display range of the commercial products, the commercial product display can be performed with the length of the shelf tag attached to the display shelf as a rough standard. Accordingly, the display work can be performed with high efficiency.

A second aspect of the invention is a shelf tag to be attached to a display shelf for displaying commercial products, the shelf tag being formed into an elongated rectangular of a length corresponding to a row of the display shelf and including at least commercial product names and prices of a plurality of the commercial products for one row that are to be displayed on the display shelf in the row direction, at least the commercial product names and prices being printed at positions corresponding to the display positions where the respective commercial products are to be displayed.

In this arrangement, the commercial product names and the prices of the respective commercial products to be displayed on the display shelf in one row are printed on the shelf tag at positions corresponding to the display positions of the respective commercial products. In other words, in this arrangement, the shelf tags for the respective commercial products to be displayed on the display shelf in one row are printed in a lump on the shelf tag of the elongated rectangular shape having a length corresponding to the length of the display shelf. In this type of the shelf tag, even though the display shelf is not zoned in the row direction, the display work can be performed with high efficiency while figuring out the display positions of the commercial products by attaching the shelf tag to the display shelf and then displaying the commercial products at positions where the commercial product names and the prices of the respective commercial products are printed.

Preferably, advertisement information of a shop that sells the commercial product or a manufacturer that supplies the commercial product is further printed on the shelf tag. In this arrangement, since the advertisement information is printed on the shelf tag, the shelf tag with high added value is provided.

Preferably, background patterns or background colors set according to the commercial products, the display shelves, or manufacturers that supply the products are printed on the shelf tag.

In this arrangement, the background pattern or the background color is printed on the shelf tag according to the product, the display shelf or the supply manufacturer of the product. Therefore, for example, by changing the background color according to the product or the manufacturer, the products can be distinguished easily, and the efficiency of the display work can be performed with high efficiency.

Preferably, the image of the commercial product is further printed on the shelf tag. In this arrangement, since the commercial product image is further printed, the products can be

distinguished easily, and the efficiency of the display work can be performed with high efficiency.

Preferably, the shelf tag is manufactured using a roll sheet as a printing medium.

By manufacturing the shelf tag using the roll sheet as the printing medium, manufacture of the shelf tag is preferably facilitated.

A third aspect of the invention is a shelf tag manufacturing system for manufacturing shelf tags to be attached to a display shelf for displaying commercial products including: means for calculating a display position of the commercial product to be displayed in a row direction on the basis of a display sequence of the commercial products to be displayed on the display shelf in the row direction, the number of the commercial products to be displayed and the dimension of the commercial products, means for creating shelf tag data including at least a name and a price of the commercial product and a dimensional value showing the display position arranged thereon; means for converting the shelf tag data to print data; and means for printing the shelf tag on the basis of the print data.

In this arrangement, the dimensional value indicating the display position of the commercial product calculated on the basis of the display sequence, the number of commercial products to be displayed, and the dimension of the commercial product is printed on the shelf tag together with the name and the price of the commercial product. Accordingly, even though the display shelf is not zoned in the row direction, the display work can be performed with high efficiency while figuring out the display position of the commercial product by attaching the shelf tag to the display shelf on the basis of the display position printed on the shelf tag and then displaying the commercial product at the position of the shelf tag.

Preferably, the shelf tag data is manufactured to have a length corresponding to a display range of the commercial products to be displayed in the row direction.

In this arrangement, since the shelf tag is formed to have the length corresponding to the display range of the commercial products, the commercial product display work can be performed in reference to the length of the shelf tag attached to the display shelf as a rough standard. Accordingly, the display work can be performed with high efficiency.

A fourth aspect of the invention is a shelf tag manufacturing system for manufacturing shelf tags to be attached to a display shelf for displaying commercial products including: means for calculating a display position of the commercial product to be displayed in a row direction on the basis of a display sequence of the commercial products to be displayed on the display shelf in the row direction, the number of commercial products to be displayed, and dimension of the commercial product; means for creating shelf tag data including names and prices of a plurality of commercial products to be displayed on the display shelf in one row arranged at positions corresponding to the display positions of the respective commercial products in a length corresponding to one row of the display shelf; means for converting the shelf tag data into print data; and means for printing the shelf tag on the basis of the print data.

In this arrangement, the shelf tag includes the names and the prices of the respective commercial products to be displayed on the display shelf in one row printed thereon at positions corresponding to the display positions of the respective commercial products. In other words, in this arrangement, the shelf tags for the respective commercial products in one row of the display shelf in a lump on the shelf tag of an elongated rectangular shape having a length corresponding to the length of the display shelf. With the shelf tag in this type, even through the display shelf is not zoned in the row direction, the display work can be performed with high efficiency while figuring out the display positions of the commercial products by attaching the shelf tag to the display shelf and then displaying the commercial products at positions where the names and the prices of the respective commercial products are printed.

A fifth aspect of the invention is a method of manufacturing shelf tags to be attached to a display shelf for displaying commercial products including: a step of calculating display position of the commercial product to be displayed in a row direction on the basis of a display sequence of the commercial products to be displayed on the display shelf in the row direction, the number of the commercial products to be displayed and dimension of the commercial products, a step of creating shelf tag data including at least a name and a price of the commercial product and a dimensional value showing the display position arranged thereon; a step of converting the shelf tag data to print data; and a step of printing the shelf tag on the basis of the print data.

According to this method, the dimensional value indicating the display position of the commercial product calculated on the basis of the display sequence of the commercial products, the number of commercial products to be displayed and the commercial product dimension is printed on the shelf tag together with the name and price of the commercial product. Accordingly, even though the display shelf is not zoned in the row direction, the display work can be performed with high efficiency while figuring out the display position of the commercial product by attaching the shelf tag to the display shelf on the basis of the display position printed on the shelf tag, and then displaying the commercial products at position of the shelf tag.

A sixth aspect of the invention is a program implemented by a computer for manufacturing a shelf tag to be attached to a display shelf for a displaying commercial product and causing the computer to execute processing including; calculating a display position of the commercial product to be displayed in a row direction on the basis of a display sequence of the commercial products to be displayed on the display shelf in the row direction, the number of the commercial products to be displayed and dimension of the commercial products; creating shelf tag data including at least a name and a price of the commercial product and a dimensional value showing the display position arranged thereon; converting the shelf tag data to print data; and printing the shelf tag on the basis of the print data.

According to this program, the dimensional value indicating the display position of the commercial product calculated on the basis of the display sequence of the commercial products, the number of commercial products to be displayed and the commercial product dimension is printed on the shelf tag together with the name and price of the commercial product. Accordingly, even though the display shelf is not zoned in the row direction, the display work can be performed with high efficiency while figuring out the display position of the commercial product by attaching the shelf tag to the display shelf on the basis of the display position printed on the shelf tag, and then displaying the commercial products at position of the shelf tag.

A seventh aspect of the present invention is a storage medium storing a program implemented by a computer for manufacturing a shelf tag to be attached to a display shelf for displaying a commercial product, the program causing the computer to execute processing including: calculating a display position of the commercial product to be displayed in a row direction on the basis of a display sequence of the com-

mercial products to be displayed on the display shelf in the row direction, the number of the commercial products to be displayed and dimension of the commercial products; creating shelf tag data including at least a name and a price of the commercial product and a dimensional value showing the display position arranged thereon; converting the shelf tag data to print data; and printing the shelf tag on the basis of the print data.

According to the program provided by the storage medium, the dimensional value indicating the display position of the commercial product calculated on the basis of the display sequence of the commercial products, the number of commercial products to be displayed and the commercial product dimension is printed on the shelf tag together with the name and price of the commercial product. Accordingly, even though the display shelf is not zoned in the row direction, the display work can be performed with high efficiency while figuring out the display position of the commercial product by attaching the shelf tag to the display shelf on the basis of the display position printed on the shelf tag, and then displaying the commercial products at position of the shelf tag.

BRIEF DESCRIPTION OF THE. DRAWINGS

The invention will be described with reference to the accompanying drawings, wherein like numbers reference like elements.

FIG. **1** is a schematic block diagram showing a shelf tag manufacturing system according to a first embodiment of the invention.

FIG. **2** is a conceptual drawing showing a structure of a database.

FIG. **3** is a conceptual drawing showing the structure of the database.

FIG. **4** is a conceptual drawing showing the structure of the database.

FIG. **5** is a schematic drawing showing a format of a shelf tag.

FIG. **6** is a block diagram showing a schematic hardware configuration of a shop terminal.

FIG. **7** is a block diagram showing a schematic hardware configuration of an administrative server.

FIG. **8** is a flowchart showing a shelf tag manufacturing process.

FIG. **9** is a pattern diagram showing a usage of the shelf tag.

FIG. **10** is a pattern diagram showing how to attach the shelf tag.

FIG. **11** is a pattern diagram showing the shelf tag according to a second embodiment.

FIG. **12** is a pattern diagram showing the shelf tag according to a third embodiment.

DESCRIPTION OF EXEMPLARY EMBODIMENTS

First Embodiment

Referring now to the drawings, a first embodiment of the invention will be described. FIG. **1** is a schematic block diagram showing a shelf tag manufacturing system **1** according to this embodiment. The shelf tag manufacturing system **1** (computer system) manufactures shelf tags **100** (FIG. **9**) described later and controls various data using a database of a computer, and in this example, the system is built on the basis of a relational data model of a client/server system.

The shelf tag manufacturing system **1** includes a shop terminal **12** as a client computer installed in a shop **2**, and an administrative server **13** as a server computer installed in, for example, a head office **3** of the shop **2**. The shop terminal **12** and the administrative server **13** are connected to each other via a network **14** (for example, internet).

The administrative server **13** is configured to have an integrative server function including functions of a web server and an FTP server. Data transmission between the administrative server **13** and the shop terminal **12** is performed according to a predetermined communication protocol (for example, TCP/IP). In this example, a mode in which the server functions are integrated in a single administrative server **13** is employed. However, the mode of decentralization/integration of the server of the server function is not limited thereto, and it may be configured in an arbitrary unit such as decentering/integrating all or part of the server functions functionally or physically according to a load or the like.

The shop terminal **12** is composed, for example, of a personal computer. A printer **15** of, for example, a color inkjet type is connected to the shop terminal **12**. The printer **15** prints the shelf tags based on print data created by the shop terminal **12** described later. Although FIG. **1** shows only one of the shop terminals **12**, one or more of the shop terminals **12** are installed in the respective shops **2**.

A database **16** in which various data required for manufacturing the shelf tag is connected to the administrative server **13**. The database **16** includes a commercial product data storage section **21**, an image data storage section **22**, a display data storage section **23**, and a format data storage section **24**. In this example, the database **16** is decentered by functions to the respective storage sections **21** to **24**. However, the invention is not limited to the mode of the decentralization described above.

The commercial product data storage section **21** stores commercial product data **25** of commercial products to be displayed on a display shelf T (see FIG. **9**). As shown in FIG. **2**, the commercial product data **25** is composed of a commercial product code **25***a*, a commercial product name **25***b*, a price **25***c*, and commercial product dimension **25***d* in this example. The commercial product code **25***a* is data for identifying a commercial product and is composed of alphabets and numerals of a predetermined number of digits. The commercial product name **25***b* is data indicating an appellation of the commercial product and is composed of text data. The price **25***c* is price data indicating a price of the commercial product. The commercial product dimensions **25***d* is numerical data indicating a width of the commercial product (the length in the longitudinal direction of a rail R of the display shelf T), and is represented by a dimensional unit of centimeter in this example.

The image data storage section **22** stores an image file **26***a* which stores a commercial product image **26** (see FIG. **9**) of the commercial product. More specifically, as shown in FIG. **3**, the image files **26***a* of the respective commercial products are stored in association with the commercial product code **25***a* of the same commercial product. The commercial product image **26** is composed of photograph image data (color image) in this example, and is stored in a contracted scale which can be printed on the shelf tag.

The display data storage section **23** stores display data **27** of the commercial product to be displayed on the display shelf T. As shown in FIG. **4**, the display data **27** is stored in association with the commercial product code **25***a* of the commercial product, and in this example, is composed of a shelf number **27***a*, a rail length **27***b*, a display sequence **27***c*, a number of commercial products to be displayed **27***d*, and a display position **27***e*. The shelf number **27***a* is data for identifying the display shelf T of the commercial product, and is

composed of alphabets and numerals of a predetermined number of digits. The rail length **27***b* is a numerical data indicating a width of the display shelf T for one row (that is, the length of the rail R), and is represented by a dimensional unit of centimeter in this example. The display sequence **27***c* is data indicating the display sequence of the commercial product in the display shelf T, and in this example, indicates the display sequence from the left end with reference to the left end of the display shelf T (the left end in a state of viewing toward the display shelf). The number of commercial product to be displayed **27***d* is numerical data indicating the number of commercial product to be displayed in the row direction in the display shelf T.

The display position **27***e* is numerical data indicating a position to start display of the commercial product in the display shelf T, and indicates a distance (absolute position) from the left end of the display shelf T by a dimensional unit of centimeter in this example. More specifically, the display position **27***e* is calculated on the basis of the display sequence **27***c* of a commercial product, the commercial product dimension **25***d* of a commercial product displayed on the left side of the corresponding commercial product and the number of commercial products to be displayed **27***d*. However, as regards the product which is set to the "first" commercial product as the display sequence **27***c*, the display position **27***e* is set to "0 (cm)". In other words, the commercial product displayed at the leftmost position in the respective display shelf T is set to "0 (cm)" in its display position **27***e*, and as regards commercial products displayed on the right side thereof, the display position **27***e* thereof is determined on the basis of the commercial product dimension **25***d* and the number of commercial products to be displayed **27***d* of the commercial products displayed on the left side thereof.

The format data storage section **24** stores format data (created format **28**) for manufacturing the shelf tag. As shown in FIG. **5**, the created format **28** includes a shelf tag size defining an aspect ratio of the shelf tag (vertical width L×lateral width W) and a layout area **29** defining printing positions of various data to be printed on the shelf tag set therein. In this example, layout areas **29***a* to **29***d* for printing the commercial product name **25***b*, the price **25***c*, the commercial product image **26**, and the display position **27***e* are set on the shelf tag.

Referring now to FIG. **6** and FIG. **7**, a functional structure of the shop terminal **12** and the administrative server **13** relating to the shelf tag manufacturing system **1** according to this embodiment will be described.

FIG. **6** is a block diagram showing a schematic hardware configuration of the shop terminal **12**.

The shop terminal **12** includes an operating unit **31**, a display unit **32**, an input/output I/F (interface, hereinafter) unit **33**, a control unit **34**, and a communication I/F unit **35**.

The input/output I/F unit **33** controls the operating unit **31**, the display unit **32**, and data transmission with the printer **15**. The operating unit **31** is composed of, for example, a keyboard **31***a* and a mouse **31***b* (see FIG. **1**), and these are used for input of various data or instruction by a personnel of the shop **2**. The display unit **32** is composed of, for example, a monitor **32***a* (FIG. **1**) such as a CRT or an LCD, and displays a screen on which the personnel performs processing or a screen which shows a result of the processing. The communication I/F unit **35** controls communication between the shop terminal **12** and the network **14** via a communication device such as a router, not shown.

The control unit **34** is composed of a CPU, a ROM, a RAM, and so on, not shown, and includes a shelf tag data acquisition unit **41** and a print control unit **42** in terms of functional concept. A program for realizing the processing in the respective functional units **41**, **42** is stored, for example, in the ROM, and the CPU executes the processing using the RAM as an operating area for buffer and the like according to a program stored in the ROM.

The shelf tag data acquisition unit **41** is a processing unit for acquiring image data of the shelf tag to be created (printed) (hereinafter referred to as "shelf tag data) from the administrative server **13**. More specifically, in this example, the commercial product code **25***a* of the commercial product whose shelf tag is to be created is transmitted to the administrative server **13**, the shelf tag data corresponding thereto is acquired from the administrative server **13** on the basis of the commercial product code **25***a*. Selection of the commercial product whose shelf tag is to be manufactured is achieved, for example, by acquiring a list of commercial products stored in the commercial product data storage section **21** and selecting the commercial product from the commercial product list by the personnel of the shop **2**.

The print control unit **42** is a processing unit that converts the shelf tag data acquired by the shelf tag data acquisition unit **41** into print data that can be handled by the printer **15** and transmits the print data to the printer **15**. In other words, the printer **15** performs a printing operation on a predetermined printing medium (in this example, roll sheet) on the basis of the print data supplied from the print control unit **42**. Consequently, the shelf tag is manufactured. It is also applicable to provide such a function of the print control unit **42** on the printer **15** side, and convert the shelf tag data received by the shop terminal **12** into the print data on the printer **15** side.

FIG. **7** is a block diagram showing a schematic hardware structure of the administrative server **13**.

The administrative server **13** includes a communication I/F unit **51**, and a control unit **52**. The communication I/F unit **51** controls both-way communication with the network **14** via the communication device such as the router, not shown. The control unit **52** is composed of the CPU, the ROM, the RAM, and so on, not shown, and in terms of functional concept, includes a data registration/control unit **61**, a data extraction/creation unit **62**, and a data transmission unit **63**. A program for realizing processing in the respective functional units **61-63** is stored, for example, in the ROM, and the CPU executes the processing using the RAM as the operating area for buffer and the like according to the program stored in the ROM.

The data registration/control unit **61** is a processing unit that registers data to the database **16** and controls the registered data. More specifically, it executes registration of the commercial product data **25** to the commercial product data storage section **21**, registration of the commercial product image **26** (image file **26***a*) to the image data storage section **22**, registration of the display data **27** to the display data storage section **23**, registration of the created format **28** to the format data storage section **24**, and alteration and deletion of the data registered in the respective storage units **21-24**. Calculation of the display position **27***e* of the commercial product on the basis of the display sequence **27***c* of the commercial product, the number of commercial products to be displayed **27***d*, and the commercial product dimension **25***d* is performed by the data registration/control unit **61**. For example, when the display sequence **27***c* of the commercial product or the number of commercial product to be displayed **27***d* is to be altered, the data of the display position **27***e* is updated accordingly. In this example, the data registration/control unit **61** controls the data in the display data storage section **23** per shop on the basis of the shop code (not shown) received from the shop terminal **12**.

The data extraction/creation unit **62** is a processing unit that extracts various data required for manufacture of the shelf tag from the database **16** in response to the shelf tag data acquisition requirement from the shop terminal **12** and creates shelf tag data on the basis of the extracted data. More specifically, in this example, on the basis of the commercial product code **25***a* received from the shop terminal **12**, the commercial product name **25***b* and the price **25***c* of the commercial product are extracted from the commercial product data storage section **21**, and the commercial product image **26** is extracted from the image data storage section **22**. The display position **27***e* of the commercial product in the display shelf T is extracted from the display data storage section **23**. In addition, the created format **28** for creating the shelf tag of the commercial product is extracted from the format data storage section **24**. The extracted commercial product name **25***b*, price **25***c*, commercial product image **26**, and display position **27***e* are arranged in the respective layout areas **29***a*-**29***d* on the created format **28** respectively, whereby the shelf tag data is created.

The data transmission unit **63** is a processing unit for transmitting the shelf tag data created by the data extraction/creation unit **62** to the shop terminal **12**.

Referring now to FIG. **8**, a flow of the shelf tag manufacturing process by the shelf tag manufacturing system **1** according to this embodiment will be described.

FIG. **8** is a flowchart showing the shelf tag manufacturing process.

When the commercial product whose shelf tag is to be manufactured is selected by the personnel of the shop **2** in Step S**110**, the shop terminal **12** transmits the commercial product code **25***a* of the commercial product to the administrative server **13** to request acquisition of the shelf tag data.

The administrative server **13** extracts data required for creating the shelf tag data from the database **16** in Step S**130** to Step S**170** respectively upon reception of the commercial product code **25***a* from the shop terminal **12**. In other words, the commercial product name **25***b* and the price **25***c* of the commercial product is extracted from the commercial product data storage section **21** in Step S**130**, the commercial product image **26** is extracted from the image data storage section **22** in Step S**140**, the display position **27***e* of the commercial product is extracted from the display data storage section **23** in Step S**150**, and the created format **28** of the shelf tag is extracted from the format data storage section **24** in Step S**160**. Then, the administrative server **13** creates the shelf tag data on the basis of the data extracted respectively from the respective storage sections **21**-**24** in Step S**170**, and the created shelf tag data is transmitted to the shop terminal in Step S**180**.

Upon reception of the shelf tag data from the administrative server **13**, the shop terminal **12** converts the shelf tag data into print data that the printer **15** can process in Step S**190**, and then transmits the print data to the printer **15** in Step S**200**.

In Step S**210**, the printer **15** performs printing process on a predetermined printing medium on the basis of the print data received from the shop terminal **12**. Accordingly, the shelf tag for the commercial product selected in Step S**110** is manufactured.

Referring now to FIG. **9** and FIG. **10**, a method of displaying the commercial product using the shelf tag manufactured by the shelf tag manufacturing system **1** according to the embodiment.

FIG. **9** is a pattern diagram showing a case in which three types of commercial products from G**1** to G**3** are displayed on the display shelf T. The commercial products G**1** are products to be displayed on the leftmost position of the display shelf T (the left end in a state of viewing toward the display shelf), the commercial products G**2** are products to be displayed on the right side of the commercial products G**1**, and the commercial products G**3** are products to be displayed on the right side of the commercial products G**2**. Here, the shelf tag **100** of the commercial products G**2** out of the shelf tags **100** manufactured for the commercial products G**1** to G**3** respectively will be described as an example.

As shown in the drawing, the shelf tag **100** includes the commercial product name **25***b* of the commercial products G**2** (chrysanthemum bouquet in this case), the price **25***c* ("380 yen" in this case), the commercial product image **26**, the display position **27***e* ("35 cm" in this case) printed thereon. The shelf tags **100** for the commercial products G**1**, G**3** also includes the corresponding contents printed thereon.

In order to display the commercial products G**2** using the shelf tag **100**, firstly, the shelf tag **100** is attached to the rail R on the display shelf T. When attaching, as shown in FIG. **10**, a scale M is placed on the rail R in the longitudinal direction, and the shelf tag **100** is attached to a position where the dimensional value of the display position **27***e* printed on the shelf tag **100** matches the dimensional value of the scale M (at a position 35 cm from the left end of the rail R). The scale M may be prepared by printing separately by the printer **15** or may be the one prepared in advance (measuring scale product or the like). After having attached the shelf tag **100** to the rail R, the commercial products G**2** are displayed in sequence rightwardly of the display shelf T with reference to the position of the shelf tag **100**. In other words, the position of the shelf tag **100** attached to the rail R on the basis of the display position **27***e* shows the position of the display start position of the commercial products G**2**. Therefore, by displaying the commercial products G**2** with reference to the position where the shelf tag **100** is attached, the commercial products G**2** can be arranged with high efficiency while figuring out the position to display the commercial products G**2** accurately even when the display shelf T is not zoned for the respective types of commercial products G**1**-G**3** in the row direction, or even when the commercial products G**1**-G**3** are not arranged in sequence from the left end on the display shelf T.

As described above, according to the embodiment, the following advantages are achieved.

(1) The display position **27***e* that indicates the display start position in the row direction of the commercial products in the display shelf T is printed in the shelf tag **100**. Therefore, even when the display shelf T is not zoned in the row direction, the commercial products can be displayed while figuring out the position where the products are to be displayed accurately on the basis of the position of the shelf tag **100** attached to the rail R. Therefore, the display work can be performed with high efficiency.

(2) The display position **27***e* to be printed on the shelf tag **100** is obtained on the basis of the commercial product dimension **25***d* and the number of commercial products to be displayed **27***d* which are arranged on the left side of the commercial products in question according to the display sequence **27***c* of the commercial products in question. Accordingly, even when the type of the commercial products to be displayed on the display shelf T is changed or when the sequence to display the commercial products or the number of commercial products to be displayed is changed, the display positions **27***e* of the respective commercial products can be obtained accurately each time. In other words, the position or the sequence to display the respective commercial products on the display shelf T can be flexibly changed according to the size or the number of inventories of the respective commercial products with easiness.

(3) In addition to the commercial product name **25***b*, the price **25***c*, the commercial product image **26** is also printed on the shelf tag **100**. Accordingly, even for the commercial products which are difficult to distinguish, the commercial product can be distinguished at a glance by the commercial product image ~**26**. Therefore, the display work can be performed with high efficiency.

Second Embodiment

Subsequently, a second embodiment of the invention will be described mainly regarding different points from the first embodiment referring to FIG. **11**. The same components as the first embodiment are represented by the same reference numerals for description.

In the second embodiment, the lateral width W (FIG. **5**) of the shelf tag manufactured according to the first embodiment is enlarged to a length of the display range of the commercial product in the row direction, and other structures are substantially the same as the first embodiment.

In other words, as shown in FIG. **11**, a shelf tag **110** in this embodiment is formed to have a lateral width **W1** which corresponds to the length of the commercial product display range determined on the basis of the commercial product dimension **25***d* and the number of commercial products to be displayed **27***d* of the commercial product of the shelf tag **110**. In this case, the respective shelf tags **110** are arranged in the rail R adjacently to each other. Even when the shelf tags **110** are formed as described above, the same advantages as in the previously described first embodiment are achieved.

In this shelf tag **110**, it is also possible to provide advertisement information **111** as shown in FIG. **11** by using a space in the shelf tag **110**. The advertisement information **111** in this case may be advertisement information which is specified (created) by the shop **2** side (for example, "advertised product", or the like) or may be advertisement information specified (created) by the manufacture side which supplies the commercial products (for example, introduction of other commercial products supplied by the manufacturer, and so on). In other words, by registering the advertisement information **111** in the database **16**, for example, in association with the commercial products, and extracting the corresponding advertisement information **111** from the database **16** and printing the same when manufacturing the shelf tag **110**, the space in the respective shelf tags **110** can be used effectively, and the shelf tag **110** having high added value can be manufactured.

Third Embodiment

Subsequently, a third embodiment of the invention will be described mainly regarding different points from the first embodiment referring to FIG. **12**. The same components as the first embodiment are represented by the same reference numerals for description.

In the third embodiment, the shelf tags for one row of the display shelf T is combined into one and are manufactured (printed) in a lump.

In other words, as shown in FIG. **12**, a shelf tag **120** in this embodiment is formed to be a long rectangular shape having a length of the rail R in lateral width **W2** in a mode including all shelf tags **120***a*-**120***d* for the respective commercial products (in the drawing, for example, for the four commercial products) to be displayed on one display shelf T. The shelf tags **120***a*-**120***d* of the respective commercial products are arranged at positions corresponding to the display positions **27***e* of the respective commercial products in the longitudinal direction, and the left end positions of the respective arranged shelf tags **120***a*-**120***d* correspond to the display start positions of the respective commercial products. By forming the shelf tag **120** in this manner, the same advantages as in the first embodiment can be achieved, and in addition, the shelf tags **120***a*-**120***d* for all the commercial products to be displayed on one display shelf T can be printed in a lump. Therefore, attaching work of the shelf tag **120** to the rail R can be facilitated. In the case of the shelf tag **120** of a bulk printing type as in the embodiment, the display positions **27***e* to be printed on the respective shelf tags **120***a*-**120***d* may be omitted.

In the above-described embodiments, an modification as follows may be employed.

Modification 1

In the shelf tag manufacturing system **1** described in the above-described embodiments, the function provided by the shop terminal **12** and the function provided by the administrative server **13** may be realized with a single computer (that is, only the shop terminal **12**). In this shelf tag manufacturing system **1** may be realized by installing programs (shelf tag manufacturing program) for manufacturing the shelf tag **100** (or **110**, or **120**) in a plurality of computers, respectively. The shelf tag manufacturing program in the embodiments described above and the modification 1 is provided in a state stored in portable media such as a flexible disk or a CD-ROM, or a main storage device or an auxiliary storage device of another calculator connected via the network. The provided program is loaded from the portable media to the main storage device of the calculator directly, or copied or installed from the portable medium once to the auxiliary storage device, and then loaded to the main storage device for execution. In a case in which it is provided in a state stored in another device connected via the network, the program is received from another device in question via the network, then copied or installed into the auxiliary storage device, and then loaded to the main storage device for execution.

Modification 2

The advertisement information **111** to be printed on the shelf tag **110** in the second embodiment described above may be printed on the shelf tag **100** in the first embodiment, or on the shelf tag **120** in the third embodiment.

Modification 3

In the respective embodiments described above, the commercial products are displayed in sequence from the left end with reference to the left end of the display shelf T (the left end viewed toward the display shelf T). However, a mode in which the commercial products are displayed in sequence from the right end with reference to the right end as a reference position.

Modification 4

The dimensional value indicating an absolute position from the left end of the display shelf T is printed as the display position **27***e* in the above-described embodiments. However, it is also possible to print a dimensional value showing a relative position between the adjacent commercial products as the display position **27***e*. In this case as well, the value of the display position **27***e* for the commercial products to be displayed on one end (the left end or the right end) as the reference position in the display shelf T is also "0 cm".

Modification 5

In the embodiments described above, the commercial product name **25***b*, the price **25***c*, the commercial product image **26**, the display position **27***e* are printed on the shelf tag **100** (or **110**, or **120**). However, at least the commercial prod-

uct name **25***b*, the price **25***c*, and the display position **27***e* have only to be printed. In addition to these items, other information may be printed as well.

Modification 6

In the above-described embodiments, the data required for manufacturing the shelf tag **100** (or **110**, or **120**) is extracted from the database **16** on the basis of the commercial product code **25***a*, and the shelf tag data is manufactured on the basis of the extracted data. However, it is also possible to create the shelf tag data corresponding to the respective commercial products in advance and register the same to the database **16**.

Modification 7

In the above-described embodiments, the shelf tag data is created on the administrative server **13** side. However, it is also possible to transmit the data extracted from the database **16** to the shop terminal **12**, and create the shelf tag data on the shop terminal **12** side.

Modification 8

In the above-described embodiments, the commercial product is selected to manufacture the shelf tag **100** (or **110**, or **120**) for the commercial product in question. However, it is also possible to adapt to select the display shelf T to manufacture the shelf tag for the respective commercial products to be displayed on the display shelf T in question. In this case, the required data is extracted on the basis of the shelf number **27***a* registered in the display data **27**.

Modification 9

In the above-described embodiment, it is also possible to change a background color of the shelf tag **100** (or **110**, or **120**) to be printed or add a background pattern on the base. In other words, by registering a background data for setting a background design in the database **16** in association, for example, with the commercial product or the display shelf and differentiating the background colors or the background patterns for each commercial product, each display shelf, or each commercial product supply manufacturer, the commercial product to be displayed on the display shelf or the manufacturers can be distinguished at a glance. Accordingly, efficiency of the display work can be improved, and the shelf tag **100** (or **110**, or **120**) with higher added value can be manufactured.

Modification 10

In the above-described embodiments, it is possible to perform simulation of the commercial product display on the basis of the display data **27** registered in the database **16** before manufacturing the shelf tag **100** (or **110**, or **120**). By manufacturing the shelf tag **100** (or **110**, or **120**) after having performed such simulation, the efficiency of display work can further be improved.

Modification 11

Design-related items in the structure stated in the embodiments or the respective modifications described above may be modified as needed within the scope of the technical idea of the invention.

The entire disclosure of Japanese Patent Application No:2005-033296, filed Feb. 9, 2005 is expressly incorporated by reference herein.

What is claimed is:

1. A shelf tag to be attached to a display shelf for displaying commercial products, comprising: a commercial product name and a price of the commercial product and a dimensional value indicating a display position of the commercial product to be displayed in a row direction on the display shelf printed on the tag, wherein the display position corresponds to a display sequence of the commercial products to be displayed on the display shelf in the row direction, a number of commercial products to be displayed on the display shelf, and a width of the commercial product, and wherein a lateral width of the shelf tag corresponds to a width of the commercial product display range in the row direction on the display shelf determined on the basis of the width of the commercial product and the number of commercial products to be displayed on the display shelf.

2. The shelf tag according to claim **1**, wherein the dimensional value indicating the display position of the commercial product is an absolute position from one end of the display shelf in the row direction or the dimensional value indicating a relative position between the adjacent commercial products.

3. The shelf tag according to claim **1**, wherein advertisement information of a shop that sells the commercial product or a manufacturer that supplies the commercial product is further printed on the shelf tag.

4. The shelf tag according to claim **1**, wherein background patterns or background colors set according to the commercial products, the display shelves, or manufacturers that supply the commercial products are printed on the shelf tag.

5. The shelf tag according to claim **1**, wherein an image of the commercial product is further printed on the shelf tag.

6. The shelf tag according to claim **1**, wherein the shelf tag is manufactured using a roll sheet as a printing medium.

7. A shelf tag to be attached to a display shelf for displaying commercial products, the shelf tag being formed into an elongated rectangular of a length corresponding to a row of the display shelf and comprising at least commercial product names and prices of a plurality of the commercial products for one row that are to be displayed on the display shelf in the row direction, at least the commercial product names and prices being printed at positions corresponding to display positions where the respective commercial products are to be displayed, wherein the display position of the commercial products to be displayed in a row direction on the display shelf correspond to a display sequence of the commercial products to be displayed on the display shelf in the row direction, a number of commercial products to be displayed on the display shelf, and a width of the commercial products, and wherein a lateral width of the shelf tap corresponds to a width of the commercial product display range in the row direction on the display shelf determined on the basis of the width of the commercial Products and the number of commercial products to be displayed on the display shelf.

8. The shelf tag according to claim **7**, wherein advertisement information of a shop that sells the commercial product or a manufacturer that supplies the commercial product is further printed on the shelf tag.

9. The shelf tag according to claim **7**, wherein background patterns or background colors set according to the commercial products, the display shelves, or manufacturers that supply the commercial products are printed on the shelf tag.

10. The shelf tag according to claim **7**, wherein an image of the commercial product is further printed on the shelf tag.

11. The shelf tag according to claim **7**, wherein the shelf tag is manufactured using a roll sheet as a printing medium.

12. A shelf tag manufacturing system for manufacturing shelf tags to be attached to a display shelf for displaying commercial product, comprising:

means for calculating a display position of the commercial product to be displayed in a row direction on the basis of a display sequence of the commercial products to be displayed on the display shelf in the row direction, the

number of commercial products to be displayed, and dimension of the commercial product;

means for creating shelf tag data including at least names and prices of a plurality of commercial products to be displayed on the display shelf in one row arranged at positions corresponding to the display positions of the respective commercial products in a length corresponding to one row of the display shelf;

means for converting the shelf tag data into print data; and

means for printing the shelf tag on the basis of the print data;

wherein a lateral width of the shelf tags corresponds to a width of a commercial product display range in the row direction on the display shelf determined on the basis of a width of the commercial products and the number of commercial products to be displayed on the display shelf.

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